Conclusions In spite of attempts to raise awareness about PAD as an important marker of cardiovascular risk, patients are still poorly treated prior to referral to a vascular clinic. In particular, the use of evidence-based treatments is sub-optimal, while hypertension and cigarette smoking are poorly managed. More work needs to be done to educate health professionals about the detection and optimal medical management of PAD.

Vascular Involvement in Diabetic Subjects with Ischemic Foot Ulcer: A New Morphologic Categorization of Disease Severity

Graziani L., Silvestro A., Bertone V., Manara E., Andreini R., Sigala A., Mingardi R., De Giglio R. Eur J Vasc Endovasc Surg 2007;33:453-60.

Objectives Arteriographic lesions of diabetic subjects with critical limb ischemia (CLI) and ischemic foot ulcer were reviewed retrospectively, to provide new criteria for stratification of these patients on the basis of their vascular involvement.

Patients In 417 consecutive CLI diabetic subjects with ischemic foot ulcer undergoing lower limb angiography, lesions were defined as stenosis or occlusion, localization, and length (<5 cm, 5–10 cm, >10 cm). In a subgroup of 389 subjects, foot arteries also were evaluated. Patients then were categorized into 7 classes of progressive vascular involvement based on angiographic findings.

Results Of the 2893 found lesions (55% occlusions) 1% were in the iliac arteries, whereas 74% were in below-the-knee (BTK) arteries. Sixty-six % of all BTK lesions were occlusions, and 50% were occlusions >10 cm ($p<0.001$ vs proximal segments). Occlusions of all BTK were present in 28% of patients, although there was patency of at least one foot artery in 55% of patients. The morphologic Class 4 (two arteries occluded and multiple stenoses of tibial/peroneal and/or femoral/popliteal vessels) was the most common (36%). An inverse correlation between morphologic class and TcPO2 was observed ($r=-0.187$, $p=0.003$).

Conclusions In CLI diabetic subjects with ischemic foot ulcer, the vascular involvement is extremely diffuse and particularly severe in tibial arteries, with high prevalence of long occlusions. A new morphologic categorization of these patients is proposed.

Simultaneous Changes of Leg Circumference and Interface Pressure Under Different Compression Bandages

Mosti G.B., Mattaliano V. Eur J Vasc Endovasc Surg 2007;33:476-82.

Objectives To assess the validity of measuring changes of sub bandage pressure and leg circumference in different body positions for an in vivo characterization of the elastic properties of bandage systems.

Design Experimental study.

Materials and methods Different compression bandages were applied on the leg. The variations of interface pressure and leg circumference above the inner ankle (that depends on the elastic property of the bandage) were measured simultaneously by a pressure transducer and by strain-gauge plethysmography in 50 patients. Stiffness is defined as the increase of pressure per increase of circumference.

Results The most consistent parameter to differentiate elastic from inelastic bandages was the pressure-difference between the standing and the lying position corrected for the actual increase of leg circumference (modified static stiffness index, mSSI; sensitivity and specificity 100%). Neglecting the individual changes of the circumference and considering the pressure difference alone allows a differentiation which is slightly less accurate (sensitivity 100%, specificity 88%) but much simpler to use.

Conclusions The static stiffness index is a useful tool to differentiate elastic from inelastic bandage material even without correction for the individual increase of leg circumference.

Mobility in Patients with Venous Leg Ulceration

Clarke-Moloney M., Godfrey A., O'Connor V., Meagher H., Burke P.E., Kavanagh E.G., Grace P.A., Lyons G.M. Eur J Vasc Endovasc Surg 2007; 33:488-93.

Objectives To compare mobility in patients with venous leg ulcers to matched controls and determine the influence of mobility, age and ulcer size on ulcer healing.

Methods 25 leg ulcer patients, and 25 matched controls wore a mobility monitor (ActivPAL™, PAL Technologies Ltd, Glasgow, Scotland)) which recorded the number of steps and amount of time spent walking, standing, sitting or lying for a one-week period. A walking index was calculated. The ulcer group were treated with compression bandaging and ulcer healing recorded over 12 weeks.

Results There were 13 female subjects in each group. The median age was 70.5 (range 30–89) years. There was no difference in the amount of time either group spent standing, walking and resting. There was a significant reduction in the number of steps taken and in the walking index in the ulcer group compared to controls (ulcer group, median 6,685 steps/day, range 2074–17,999; control group median 8750, range 4917–16,043, $p<0.05$, Mann Whitney u test). Smaller ulcers and ulcers of recent onset were most likely to heal within 12 weeks ($p=0.005$ and $p=0.011$ respectively, Chi squared test). The percentage of time spent mobilising and resting did not influence ulcer healing ($r_s=-0.125$; $p=0.55$).

Conclusions Mobility patterns among patients with leg ulcers are not significantly different to age matched controls. Ulcer patients take fewer steps per week compared to controls indicating they have reduced calf muscle pump function. Further studies are required to determine whether therapies which increase calf muscle activity have a role in ulcer treatment.